



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
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SEAMOUNT FISHERY, FOREIGN VESSEL OBSERVER REPORT

KITAKAMI MARU (JUNE 9-JULY 21, 1983)

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On May 16, 1983 the National Marine Fisheries Service (NMFS), Southwest Fisheries Center Honolulu Laboratory (HL) was notified by Nippon Suisan Kaisha, Ltd. of Japan that one of the company's trawlers intended to fish within the U.S. Fishery Conservation Zone (FCZ). It was planned that the trawler, Kitakami Maru (Table 1), would begin fishing in the FCZ during the second week of June.

Table 1.--Vessel specifications and personnel, Kitakami Maru.

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Vessel statistics

Radio call sign:	JMLB
Permit number:	JA-83-0321-A
Length:	56.62 m
Gross tonnage:	549.86
Net tonnage:	215.92
Width:	9.2 m
Draft:	3.8 m
Engine type:	Diesel
Horsepower:	1500
Hull number:	100765
Registration number:	F01-132
Company-owner:	Nippon Suisan Kaisha, Ltd.
Vessel type:	Independent stern trawler
Year commissioned:	1966
Home port:	Tobata, Kita-Kyushu, Japan

Personnel

Captain:	Kaname Taketsugu
Number of officers:	8
Number of crew:	19
Processing:	15
Total ship complement:	27
Experience in seamount fishery:	None

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As a member of the NMFS HL Foreign Fishing Vessel Observer Program, I was assigned to monitor the Kitakami Maru's fishing operations in the FCZ. I boarded the Kitakami Maru on June 9 at Midway Island. The ship began fishing at the Hancock Seamounts on June 10 and operated there until July 7. It then left the FCZ to fish seamounts to the northwest. On July 13 the Kitakami Maru reentered the FCZ and resumed fishing at Hancock. The ship left the FCZ again on July 15, fishing on seamounts outside the FCZ until July 21. We then met a cargo ship, the Bering Maru, which was carrying observer Alan Everson out from Japan. Everson replaced me as observer aboard the Kitakami Maru. I was transferred to the cargo ship and disembarked at Dutch Harbor, Alaska on July 28.

## Compliance

The Kitakami Maru's officers estimated the size of the catch by back-calculating from the weight of finished product. In my opinion, this caused them to underestimate the catch of some species. Small alfonsins and other fish were usually discarded without being weighed. My estimates of both the catch weight percentages of these fish and of total catch were higher than those of the ship.

The Kitakami Maru was boarded by a party from the U.S. Coast Guard cutter Jarvis on July 6. Details may be obtained from U.S. Coast Guard District 14 or the Western Pacific Program Office of the NMFS Southwest Region.

## FISHING ACTIVITIES

### Trawl Operations

The Kitakami Maru made 104 trawl hauls at Northwest Hancock Seamount (lat. 30°16'-17'N, long. 178°42'-43'E). The average trawling time per haul was 99 min. The ship made 49 hauls at Southeast Hancock Seamount (lat. 29°47'-49'N, long. 179°03'-05'E). The average trawling time per haul at this location was 111 min. Two hauls were made at K-Bank (lat. 29°42'N, long. 179°20' E). The average trawling time per haul was 20 min. The trawl gear dimensions are given in Figure 1. Data on catch per unit of effort by area and species are given in Table 2.

### Overall Catch

Out of a total of 151.665 metric tons (MT) caught at the Hancock Seamounts during June 10-July 15, 133.032 MT (87.7%) were armorhead, 9.927 MT (6.6%) were alfonsin, and 8.706 MT (5.7%) were other species (Table 3).

### Shipboard Processing of Catch

The catch was processed into headed and gutted frozen fish, and frozen ovaries. The Kitakami Maru had no fishmeal or fish oil plants. All fish or parts of fish that were unsuitable for freezing (inedible species, heads, viscera, small or badly damaged fish) were discarded.

As mentioned earlier, the ship estimated total catch by applying recovery ratios to the weight of finished product. I was not able to discover the exact figures being used. They should, however, be similar to those recorded in previous observer cruises.

Type of Vessel Independent stern trawler

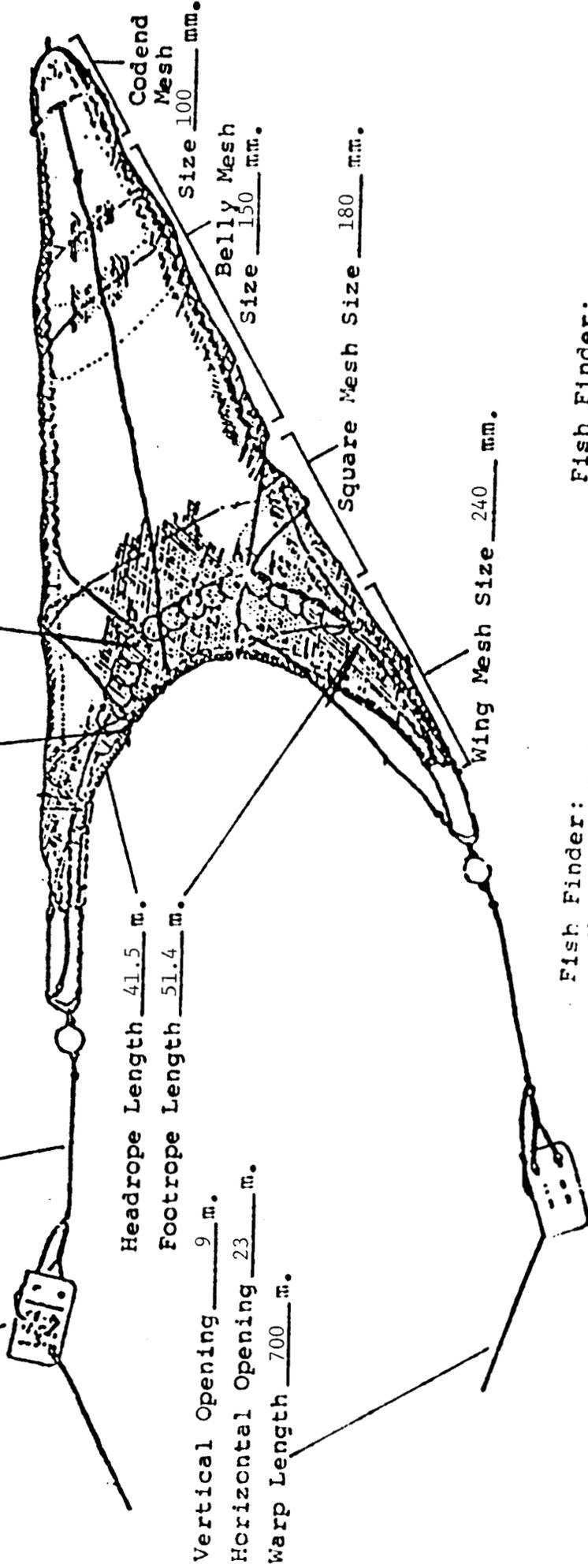
Observation Period June 9-July 21, 1983

Trawl Doors: Shape Rectangular  
Type Steel  
Dimensions 1.84 m. x 2.76 m.  
Weight 1,758 kg.

Dandyline Length 130 m.

Floats: Number 23  
Size 36 cm. diameter  
Material Plastic  
Shape Spherical

Bobbins: Number 23  
Size 53 cm. diameter  
Material 12 steel, 9 rubber  
Shape Spherical



Vertical Opening 9 m.  
Horizontal Opening 23 m.  
Warp Length 700 m.

Fish Finder: Name Kijodenki  
Model Number Wide size  
Frequency 24,75,200 Hz.  
Paper Type Wet xx Dry  
Speed of Advance 3 ft./min.

Fish Finder: Name Japan Radio Corp.  
Model Number NJA-330  
Frequency 28,75,200 Hz.  
Paper Type Wet xx Dry  
Speed of Advance 3 ft./min.

Net Recorder: Name Furuno  
Model Number FNR 100  
Frequency 50 Hz. (to ship)  
180 Hz. (to bottom)

Figure 1.--Net dimensions and characteristics.

Table 2.--Catch per unit of effort by area and species.

	Northwest Hancock Seamount	Southeast Hancock Seamount	K-Bank
No. hauls	104	49	2
Total minutes <sup>1</sup> (trawl in water)	10,318	5,460	40
Armorhead			
Total catch (kg)	99,607	33,415	10
Kilogram/minute	9.65	6.12	0.25
Alfonsin			
Total catch (kg)	8,582	1,320	25
Kilogram/minute	0.83	0.24	0.63
Other species			
Total catch (kg)	4,401	4,290	15
Kilogram/minute	0.43	0.79	0.37
All species			
Total catch (kg)	112,590	39,025	50
Kilogram/minute	10.91	7.15	1.25

<sup>1</sup>The recorded trawl times include periods when the ship was turning and not over the seamount.

Table 3.--Trawl catch by species and area (in metric tons).

	Northwest Hancock Seamount	Southeast Hancock Seamount	K-Bank	Total
Armorhead	99.607	33.415	0.010	133.032
Alfonsin	8.582	1.320	0.025	9.927
Others	4.401	4.290	0.015	8.706
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Total	112.590	39.025	0.050	151.665

## BIOLOGICAL OBSERVATIONS

## Target Species

1. Armorhead, Pentaceros richardsoni (Species code: 080)  
(Japanese name: Kusakari tsubodai) (Table 4)

Biological sampling of armorhead was done at Northwest and Southeast Hancock Seamounts. I collected data on fork length, weight, sex, and female sexual maturity. In collecting these data I separated the armorhead into three body types: fat, lean, and intermediate (= medium). This division was based on color, the amount of fat on the dorsal side, and the general body shape. The causes of the variation in body type are unknown. I saw many more of the "fat" type and fewer "leans" than I had in previous cruises.

Table 4.--Observations on armorhead, Pentaceros richardsoni.

Body type	Fat	Lean	Medium	Total
Northwest Hancock Seamount				
Percent of sample	6.9	1.4	91.7	100
Number measured and weighed	56	11	741	808
Length range (mm)	296-336	267-309	201-375	201-375
Average length (mm)	315	289	307	307
Average weight (kg)	0.72	0.36	0.49	0.51
Number sexed	56	11	736	803
Number (%) males	35(62.5%)	11(100%)	412(56.0%)	458(57.0%)
Number (%) females	21(37.5%)	0(0%)	324(44.0%)	345(43.0%)
No.(%) imm. females	0(0.0%)		12(3.7%)	12(3.5%)
No.(%) dev. females	21(100%)		293(90.4%)	314(91.0%)
No.(%) ripe females	0(0.0%)		18(5.6%)	18(5.2%)
No.(%) spent females	0(0.0%)		1(0.3%)	1(0.3%)
Southeast Hancock Seamount				
Percent of sample	3.4	0.3	96.3	100
Number measured, weighed, and sexed	13	1	365	379
Length range (mm)	213-327	268	256-330	213-330
Average length (mm)	307	268	305	305
Average weight (kg)	0.70	0.25	0.45	0.46
Number (%) males	8(61.5%)	1(100%)	205(56.2%)	214(56.5%)
Number (%) females	5(38.5%)	0(0%)	160(43.8%)	165(43.5%)
No.(%) dev. females	5(100%)		158(99.4%)	163(99.4%)
No.(%) ripe females	0(0%)		1(0.6%)	1(0.6%)

2. Alfonsin, Beryx splendens (Species code: 081)  
(Japanese name: Kinmedai) (Table 5)

Biological sampling of alfonsin was done at Northwest and Southeast Hancock Seamounts. I collected data on fork length, weight, sex, and female sexual maturity. Most of the alfonsin sampled were small, less than 20 cm. Many of these small fish could not be sexed.

Table 5.--Observations on alfonsin, Beryx splendens.

	Northwest Hancock Seamount	Southeast Hancock Seamount
Number measured and weighed	708	212
Length range (mm)	141-383	149-354
Average length (mm)	179	201
Average weight (kg)	0.16	0.23
Number sexed	173	129
Number (%) males	87(50.3%)	59(45.7%)
Number (%) females	86(49.7%)	70(54.3%)
No.(%) imm. females	44(51.2%)	11(15.7%)
No.(%) dev. females	35(40.7%)	53(75.7%)
No.(%) ripe females	7(8.1%)	6(8.6%)

#### ITINERARY

June	9	-Departed Honolulu Arrived Midway Embarked <u>Kitakami Maru</u>
	10	-Arrived Hancock; began sampling
July	7	-Departed FCZ; sampling ended
	12	-Reentered FCZ; sampling resumed
	15	-Departed FCZ; sampling ended
	21	-Transferred to cargo ship
	28	-Disembarked at Dutch Harbor, Alaska -Departed Dutch Harbor -Arrived Anchorage -Departed Anchorage
	29	-Arrived Honolulu

## RECORDS

The following records were kept:

Scientists log  
Daily trawl haul form  
Species composition from basket samples  
Size-frequency log

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